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BEFORE THE  
Federal Communications Commission

WASHINGTON, D.C.

In the Matter of )

Preparation for International )  
Telecommunication Union World )  
Radiocommunication Conferences )

IC Docket No. 94-31

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

COMMENTS OF  
AMERICAN MOBILE SATELLITE CORPORATION

Bruce D. Jacobs  
Glenn S. Richards  
Howard C. Griboff  
Fisher Wayland Cooper Leader  
& Zaragoza L.L.P.  
2001 Pennsylvania Ave., N.W.  
Suite 400  
Washington, DC 20006  
(202) 659-3494

Lon C. Levin  
Vice President and  
Regulatory Counsel  
10802 Park Ridge Boulevard  
Reston, VA 22091  
(703) 758-6000

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## Summary

The 1995 World Radiocommunication Conference ("WRC-95") presents a timely opportunity for the international community to complete the work begun at the 1992 World Administrative Radio Conference ("WARC-92") regarding international implementation of the Mobile Satellite Service ("MSS"). American Mobile Satellite Corporation ("AMSC") urges the Commission to help make MSS allocations the Conference's highest priority.

The primary U.S. goal at WRC-95 must be to ensure sufficient unconstrained spectrum for MSS use. Minor changes to existing allocations and limited new allocations will provide significant relief for MSS. Specifically, the U.S. should advocate generic MSS allocations in the lower L-band and the upper L-band; power limits for terrestrial services that will allow sharing between MSS and terrestrial systems; an upgrade of the secondary MSS allocation at 2120-2130 MHz to primary; and a new MSS allocation at 2010-2025 that will permit a practical MSS allocation of 35 X 2 MHz at 1990-2025/2165-2200 MHz. In addition, the U.S. should make sure that the Conference clarifies that Resolution 46 satellite coordination procedures do not apply to the 1525-1559/1625.5-1660.5 MHz bands.

AMSC endorses the Voluntary Group of Experts ("VGE") efforts to streamline the Radio Regulations. Nevertheless, the U.S. must protect against the possibility that VGE deliberations will dominate the Conference to the detriment of MSS. AMSC submits that given the enormous scope of the changes to the Radio Regulations proposed by the VGE, WRC-95 simply will be unable to adopt the VGE. As a result, AMSC recommends that WRC-95 should

categorize VGE proposals according to service and place those matters on the various agendas for adoption at future relevant WRCs.

Finally, in anticipation of future WRCs, AMSC requests that the U.S. clarify that Resolution 528 does not apply to Digital Audio Radio Services in the 2310-2360 MHz band. AMSC also makes recommendations on how the FCC and the U.S. can appropriately prepare for future conferences.

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| Radiocommunication Conferences | ) |                     |

**COMMENTS OF  
AMERICAN MOBILE SATELLITE CORPORATION**

American Mobile Satellite Corporation ("AMSC") hereby submits its comments on the Notice of Inquiry (the "NOI") in the above-referenced proceeding concerning the 1995 World Radiocommunication Conference ("WRC-95").<sup>1/</sup> AMSC urges the Commission to help make Mobile Satellite Service ("MSS") allocations the Conference's highest priority. The primary U.S. goal at WRC-95 must be to make available sufficient unconstrained spectrum for use by MSS systems. This goal can be met by refining the bands allocated to MSS at the 1992 World Administrative Radio Conference ("WARC-92") and by adding limited, new MSS allocations. AMSC also offers various recommendations on the Report of the Voluntary Group of Experts ("VGE") and how the FCC might better prepare for future WRCs.

Background

AMSC is the parent corporation of AMSC Subsidiary Corporation, the FCC licensee of the U.S. MSS and AMS(R)S

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<sup>1/</sup> Notice of Inquiry, IC Docket No. 94-31, 9 FCC Rcd 2430 (1994) ("NOI"); Order, DA 94-566 (June 2, 1994) (extending deadline for filing comments to July 15, 1994).

(aeronautical safety service) system.<sup>2/</sup> AMSC is preparing for the launch of its first satellite and the commencement of full service operations in 1995. AMSC is also the parent corporation of Personal Communications Satellite Corporation ("PCSAT"), an applicant to construct an MSS system in the 1970-1990/2160-2180 MHz bands,<sup>3/</sup> and of American Mobile Radio Corporation, an applicant to construct a Digital Audio Radio Service ("DARS") satellite system in the 2310-2360 MHz band.<sup>4/</sup>

The AMSC first generation MSS system will provide thousands of channels of high-quality, two-way mobile voice communications over an area covering millions of square miles of land, air and water not served by terrestrial facilities, as well as providing a nationwide communications system for public safety, law enforcement and interstate transportation, and allowing access to

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<sup>2/</sup> See Memorandum Opinion, Order and Authorization, 4 FCC Rcd 6041 (1989); Final Decision on Remand, 7 FCC Rcd 266 (1992), aff'd sub nom., Aeronautical Radio, Inc. v. FCC, 983 F.2d 275 (D.C. Cir. 1993). AMSC is licensed to operate its system in the upper L-band, 1544-1559/1645.5-1660.5 MHz, and has requests pending to expand its operations into the lower L-band, 1530-1544/1631.5-1645.5 MHz, see FCC File No. 59-DSS-MP/ML-93, and the new MSS allocation at 1610-1626.5/2483.5-2500 MHz, see FCC File Nos. 15/16-DSS-MP-91.

AMSC's owners include such communications industry leaders as GM Hughes Electronics Corporation, McCaw Cellular Communications, Inc., Mobile Telecommunications Technologies Corporation and Singapore Telecommunications Ltd.

<sup>3/</sup> See FCC File Nos. 24/25-DSS-P-94. PCSAT also has filed a Petition for Rulemaking to allocate to MSS the bands that are the subject of its application. Petition of Personal Communications Satellite Corporation (April 7, 1994).

<sup>4/</sup> See FCC File Nos. 10/11-DSS-P-93; 26/27-DSS-LA-93.

the Public Switched Telephone Network, packet data networks and private telecommunication facilities.<sup>5/</sup>

AMSC has contracted with a number of companies to distribute its services, including more than 155 cellular carriers. AMSC's demand forecasts show that its first generation system could reach saturation well before the end of the satellites' useful lives, even if it is augmented with the additional capacity that may be available in other bands for which it has applied. Thus, AMSC has begun the licensing process for its follow-on system, PCSAT, seeking to insure that in the future sufficient capacity will be available both for new and existing MSS customers.

As with all growing radio-based services, the viability of MSS is tied directly to the availability of spectrum. Currently, there is a dramatic shortage of unconstrained MSS spectrum below 3 GHz due to the tremendous demand for such spectrum by an increasing number of operational or proposed MSS systems worldwide.<sup>6/</sup> Inmarsat is operating its first- and second-

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<sup>5/</sup> The AMSC system also will have a significant positive impact on the U.S. economy. A study prepared by AMSC indicates that during the next seven years the development of the AMSC system will provide an average of 2,000 well-paid, skilled jobs per year for U.S. workers and contribute more than \$5.5 billion to the U.S. Gross National Product. A copy of the study is attached as Exhibit A to the Comments of AMSC Subsidiary Corporation, filed in CC Docket No. 92-166 (May 5, 1994).

<sup>6/</sup> It has already been established that there is significant demand for substantial MSS allocations, particularly in the United States. See, e.g., Industry Advisory Committee Report No. 37 (December 3, 1990); CCIR IWP 8/15 Report (November 1991); Second Notice of Inquiry, GEN Docket No. 89-554, 5 FCC Rcd 6046 (1990); Supplemental Notice of Inquiry, GEN Docket No. 89-554, 6 FCC Rcd 1914 (1991); Report, GEN Docket No. 89-554, 6 FCC Rcd 3900 (1991); U.S. Proposals for the 1992 WARC for Dealing with Frequency  
(continued...)

generation satellites, constructing a third-generation system, and planning a fourth-generation system. In addition to AMSC's U.S. MSS systems (those proposed by AMSC Subsidiary Corporation and PCSAT), seven other U.S. companies have filed applications with the FCC to construct MSS systems that will operate in bands below 3 GHz, and numerous other systems have been discussed in the trade press.<sup>2/</sup> Internationally, more than 120 foreign MSS networks have been Advance Published with the ITU to operate in the frequencies assigned to or requested by AMSC.<sup>3/</sup>

There has been some spectrum relief both internationally and domestically for the new service. Led by the efforts of the U.S. delegation, MSS advocates succeeded at WARC-92 in gaining MSS allocations totalling more than 200 megahertz, the first new MSS

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<sup>5/</sup> (...continued)

Allocations in Certain Parts of the Spectrum, Department of State Publication 9903 (July 1991); U.S. Delegation Report, WARC, International Telecommunication Union, Malaga-Torremolinos, Spain, Department of State Publication 9988 (July 1992).

<sup>2/</sup> See, e.g., Applications of Celsat, Inc., File Nos. 26/27/28-DSS-P-94 (April 8, 1994); Constellation Communications, Inc., File Nos. 17-DSS-P-91, CSS-91-013 (June 3, 1991); Ellipsat Corporation, File Nos. 11-DSS-P-9 (November 5, 1990) and 18-DSS-P-91(18) (June 3, 1991); Loral Qualcomm Satellite Services, Inc., File Nos. 19-DSS-P-91, CSS-91-014 (June 3, 1991); Motorola Satellite Communications, Inc., File Nos. 9-DSS-P-91(87), CSS-91-010 (December 3, 1990); TRW, Inc., File Nos. 20-DSS-P-91(12), CSS-91-015 (June 3, 1991); Orbital Communications Corporation, File No. 20-DSS-MP-90(20) (February 28, 1990). See also Petition for Rulemaking of Celsat, Inc., FCC RM-7927 (February 6, 1992); "Phone Space Race Has Fortune at Stake," Wall Street Journal, January 18, 1993, at B1; "Bird Watching," Cellular Business, July 1993, at 23; "The RCR Top 20 Mobile Satellite Companies," RCR, September 27, 1993, at 16.

<sup>3/</sup> See "Report on the Experience of the Radiocommunication Bureau in the Application of Resolution 46," ITU-R Doc. 4-5/2 (May 10, 1994).



allocations since the 1979 Conference.<sup>9/</sup> Though significant, the new MSS allocations still fell far short of the 355 megahertz identified by U.S. industry groups as likely to be required to meet demand for the new service.<sup>10/</sup> In addition, time constraints at the 1992 Conference made it impossible to resolve any issues concerning use and sharing of the new MSS allocations. Therefore, the use of these allocations was conditioned upon the successful resolution of frequency sharing issues by Working Parties and Study Groups of the Radiocommunication Sector.<sup>11/</sup>

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<sup>9/</sup> The following MSS allocations were made at WARC-92:

|               |                  |                       |
|---------------|------------------|-----------------------|
| 1492-1525 MHz | (space-to-Earth) | (Region 2, primary)   |
| 1675-1710 MHz | (Earth-to-space) | (Region 2, primary)   |
| 1930-1970 MHz | (Earth-to-space) | (Region 2, secondary) |
| 1970-1980 MHz | (Earth-to-space) | (Region 2, primary)   |
| 1980-2010 MHz | (Earth-to-space) | (Worldwide, primary)  |
| 2120-2160 MHz | (space-to-Earth) | (Region 2, secondary) |
| 2160-2170 MHz | (space-to-Earth) | (Region 2, primary)   |
| 2170-2200 MHz | (space-to-Earth) | (Worldwide, primary)  |
| 2520-2535 MHz | (space-to-Earth) | (Worldwide, primary)  |
| 2655-2670 MHz | (Earth-to-space) | (Worldwide, primary)  |

The allocations in the 1970-2010 MHz and 2160-2200 MHz bands will be available in the U.S. on January 1, 1996, and worldwide in the year 2005. See RR 746B, RR 746C. The secondary allocations became available on October 12, 1993. In addition, the 1492-1525 MHz allocation is not available in the U.S. RR 722C.

<sup>10/</sup> See Comments of AMSC, Gen. Docket No. 89-554, at 6 and Table 2 (December 3, 1990). The final U.S. proposals for the conference totalled 253 megahertz for new, primary MSS allocations. See United States Proposals for the World Administrative Radio Conference, Malaga-Torremolinos, Spain, 1992 (July 1991).

<sup>11/</sup> The U.S. also was the leading advocate at WARC-92 of generic MSS allocations in the bands 1525-1544/1626.5-1645.5 MHz and 1545-1559/1646.5-1660.5 MHz, with appropriate protection for distress and safety communications. These are the only MSS bands that are not generic. WARC-92 allocated the 1530-1544/1626.5-1645.5 MHz bands to generic MSS in the United States, Argentina, Australia, Brazil, Canada, Malaysia, and Mexico (RR 726C) and allocated the 1555-1559/1656.5-1660.5 (continued...)

Since WARC-92, the Commission has allocated 220 megahertz of spectrum (1850-1990 MHz, 2110-2150 MHz and 2160-2200 MHz) for "emerging technologies,"<sup>12/</sup> of which 120 megahertz has been allocated for terrestrial Personal Communications Service, including the 1970-1990 MHz band.<sup>13/</sup> MSS interests had agreed to give up access to the 1970-1990 MHz band with the understanding that the Commission would begin a proceeding to consider new MSS allocations, in particular a domestic allocation at 1990-2025/2165-2200 MHz. The Commission stated that it would initiate such a proceeding.<sup>14/</sup>

The FCC has recently allocated the 1530-1544/1626.5-1645.5 MHz bands and the 1610-1626.5/2483.5-2500 MHz bands to MSS.<sup>15/</sup> Due to the number of MSS systems that will share the 1530-

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<sup>11/</sup> (...continued)

MHz bands to generic MSS in the United States, Argentina, Canada, Australia, and Mexico (RR 730B, RR 730C). There are also generic MSS allocations in the 1525-1530/1626.5-1631.5 MHz bands in both Regions 1 and 3, and worldwide generic MSS allocations in the 1544-1545/1645.5-1646.5 MHz bands. In addition, non-safety aeronautical communications are permitted in the 1545-1555/1646.5-1656.5 MHz bands (RR 729A). All regional MSS systems operating in the 1530-1559/1626.5-1660.5 bands will be generic, including those to be operated by AMSC, Canada, Mexico and Australia.

<sup>12/</sup> First Report and Order and Third Notice of Proposed Rulemaking, ET Docket No. 92-9, 7 FCC Rcd 6886 (1992).

<sup>13/</sup> Memorandum Opinion and Order, GEN Docket No. 90-314, FCC 94-144 (June 13, 1994). Ironically, the U.S. was the leading proponent for the 1970-1990 MSS allocation.

<sup>14/</sup> Id. at paras. 91-97.

<sup>15/</sup> See First Report and Order and Further Notice of Proposed Rulemaking, GEN Docket No. 90-56, 8 FCC Rcd 4246 (1993); Report and Order, ET Docket No. 92-28, 9 FCC Rcd 536 (1994). AMSC has requested the use of both of these allocations for its MSS system. See supra note 2. The FCC also proposed allocating the 1525-1530 MHz band to MSS in the Further Notice of GEN Docket No. 90-56, 8 FCC Rcd at 4248.

1544/1626.5-1645.5 MHz bands, the U.S. will have access to at most between 1 and 2 megahertz of spectrum in these bands. With regard to the 1610-1626.5/2483.5-2500 MHz bands, they will have to be shared among numerous mobile satellite systems operating in the U.S. and abroad, and with incumbent terrestrial services, and, thus, do not provide even close to enough useable spectrum to meet the demand for all the new systems that have been proposed.

More recently, the Commission initiated a proceeding addressing the 50 megahertz of spectrum that is to be relinquished by the federal government and made available next month for use by the private sector.<sup>16/</sup> Unfortunately, with possibly the exception of the 2390-2400 MHz and 2402-2417 MHz bands, much of this spectrum is not useable for MSS, and NTIA has not proposed to make available those government bands that would be useful.<sup>17/</sup>

The 1993 World Radiocommunication Conference ("WRC-93") convened in November 1993 to recommend to the International Telecommunication Union ("ITU") Administrative Council a substantive agenda for WRC-95. WRC-93's recommended agenda, adopted intact at the Council's fourteenth Plenary Meeting, had two major focal points for WRC-95: (i) review of the Final Report of the Voluntary Group of Experts ("VGE") and consideration of

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<sup>16/</sup> Notice of Inquiry, ET Docket No. 94-32, 9 FCC Rcd 2175 (1994). A total of 200 Megahertz will ultimately be made available for commercial use.

<sup>17/</sup> See Comments of AMSC on NTIA Preliminary Spectrum Reallocation Report (May 11, 1994) (submitted to FCC as attachment to Comments of AMSC, ET Docket No. 94-32 (June 15, 1994)).

proposals to simplify the Radio Regulations and (ii) MSS issues, including facilitating the use of frequency bands already allocated and adopting additional, limited allocations.<sup>18/</sup>

The Commission issued the instant NOI to solicit information to assist the U.S. in developing positions for WRC-95, to identify new issues that will be timely for consideration at WRC-97 and WRC-99, and to help the Commission to establish a continuous process of preparation for the World Radiocommunication Conferences that will be held every two years.

### Discussion

#### I. MINOR CHANGES TO EXISTING ALLOCATIONS AND LIMITED NEW ALLOCATIONS WILL PROVIDE SIGNIFICANT RELIEF FOR MSS

The goal of the U.S. at WRC-95 should be to ensure sufficient unconstrained spectrum for MSS use by easing the operational and technical constraints that limit the currently-allocated MSS spectrum and by acquiring limited, new allocations. Specifically, the U.S. should strongly advocate generic MSS allocations in the 1525-1544/1626.5-1645.5 MHz ("lower L-band") and the 1545-1559/1646.5-1660.5 MHz bands ("upper L-band"); power limits for terrestrial services that will allow MSS and terrestrial systems to share bands; an upgrade of the secondary MSS allocation at 2120-2130 MHz to primary, which is bolstered by a new primary MSS allocation at 2110-2120 MHz; and a new MSS

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<sup>18/</sup> See Resolution, R.1065, World Radiocommunication Conference 1995 (WRC-95), ITU Document C94/149-E (May 15, 1994), at 2.1.

allocation at 2010-2025 MHz that will permit a practical MSS allocation of 35 X 2 MHz at 1990-2025/2165-2200 MHz.

- A. 1525-1544/1626.5-1645.5 MHz  
1545-1559/1646.5-1660.5 MHz

The U.S. should continue to advocate worldwide generic MSS allocations in the upper and lower L-bands, with the appropriate protection of aeronautical and maritime distress and safety services.<sup>19/</sup> Generic allocations, which have been a longstanding policy of the United States, improve spectrum utilization and efficiency, particularly in terms of sharing arrangements developed during international coordination.<sup>20/</sup> In the past, some maritime and aeronautical interests have expressed concern that generic operations would compromise distress and safety communications. The U.S. position is that these services will be protected by the requirement that systems operating in the bands provide priority and preemptive access to relevant safety services. Consistent with that position, the U.S. should propose that the bands 1525-1559/1626.5-1660.5 MHz be allocated to MSS on a worldwide basis and that the service specific allocations be eliminated. Footnotes should be added consistent with the language in the current 726C in the lower L-band to protect maritime safety and distress services and the

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<sup>19/</sup> See RRs 726C, 730C. The allocation at 1660-1660.5 should also protect the Radioastronomy Service. RR 730C.

<sup>20/</sup> Service specific allocations (e.g., land, aeronautical or maritime MSS) inhibit the international coordination process because they restrict the use of the frequencies in which an administration may operate. The U.S. took a Reservation at WARC-92 preserving its sovereign right to use these bands generically. Final Protocol No. 67, Final Acts WARC-92.

current 730C in the upper L-band to protect AMS(R)S and radio astronomy.<sup>21/</sup>

The AMSC MSS system should be operational before WRC-95, and should be able to provide operational experience that priority and preemptive access for safety services is a valid concept.<sup>22/</sup> To this end, AMSC has been working closely with the aeronautical and maritime community, including the FAA and the Coast Guard, to develop standards that will permit AMSC's MSS system to provide aeronautical distress and safety communications, as well as maritime distress and safety communications as part of the Global Maritime Distress and Safety System.<sup>23/</sup>

B. 1610-1626.5/2483.5-2500 MHz

The available MSS spectrum in these bands can be made more useable by adjustments to the power limits specified for terrestrial systems in RR Article 27 and for MSS satellites in RR Article 28. RR Article 27 addresses the power limits on transmitters in the terrestrial services in all MSS bands of

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<sup>21/</sup> International supporters for generic allocations include Australia, Canada and Mexico, all of which plan domestic MSS systems in the bands. Malaysia, Brazil and Argentina also support generic allocations to a great extent. RR 726C, 730B, 730C.

<sup>22/</sup> See, e.g., Application of AMSC for Initial Station License for Transmit/Receive Earth Station at Park Ridge, Reston, Virginia, File No. 445-DSE-P/L-93, Call Sign E930124 (October 23, 1992); Amendment, Submitting Report of the Chief Scientist entitled "AMS(R)S Resource Provisioning and Interference Management in the AMSC Satellite System" (November 24, 1992), File No. 446-DSE-AMEND-93 (December 21, 1992).

<sup>23/</sup> See Comm 39/3/2, presented at the 39th Session of the International Maritime Organization Subcommittee on Radiocommunications.

interest to AMSC. RR Article 28 addresses PFD limits with coordination relief for GSO downlinks in all MSS bands of interest to AMSC. Forthcoming ITU-R Recommendations will likely specify the protective criteria for co-channel sharing and criteria that enable interfering services to operate on a non-co-channel basis.<sup>24/</sup> WRC-95 can take a major step to making currently allocated spectrum more shareable by revising RR Articles 27 and 28 to adopt the power limit results of the ITU-R sharing studies.<sup>25/</sup> In the alternative, terrestrial service allocations should be eliminated or downgraded if they cannot comply with the new criteria for protecting MSS uplinks, or they are unable to operate with the PFD levels that MSS satellites must generate for effective service.

C. The 2 GHz Bands

The U.S. should do everything possible to leave WRC-95 with an unconstrained MSS allocation of 35 X 2 MHz in the bands 1990-

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<sup>24/</sup> Protective criteria are the power limits needed to provide blanket protection for a service under co-channel sharing conditions. Enabling criteria are based on the requirements for a particular service and do not necessarily protect all systems in other services.

<sup>25/</sup> ITU-R Task Groups 2/2 and 8/3 are developing the necessary protective criteria, which should be included in the Report of the 1995 Conference Preparatory Meeting and then made available to WRC-95. However, it is likely that neither the MSS nor the terrestrial services will be able to comply with the criteria for co-channel sharing. Thus, WRC-95 will have to consider either dividing the bands or adopting provisions that ensure MSS will have access to a substantial portion of each band in the context of interservice coordination.

2025/2165-2200 MHz.<sup>26/</sup> This involves refining the MSS allocations made at WARC-92 and proposing a new MSS uplink allocation at 2010-2025 MHz. The U.S. also should propose a new MSS downlink at 2110-2120 MHz and upgrade to primary the MSS downlink allocation at 2120-2130 MHz.

With respect to refining the existing MSS allocation, power limits need to be imposed on terrestrial systems operating in the 1990-2010 MHz and 2165-2200 MHz bands. This will allow MSS systems to gain more useable spectrum when operating in areas where the bands are shared with terrestrial services.<sup>27/</sup>

One new MSS allocation proposed by AMSC for WRC-95 is at 2010-2025 MHz. This band is allocated internationally and domestically to the Fixed and Mobile Services. In the United States, the band is part of a larger band (1990-2110 MHz) that is used primarily by broadcasters for auxiliary services, including electronic newsgathering. If an international MSS allocation is adopted in the 2010-2025 MHz band (and a subsequent domestic MSS allocation is made at 1990-2025 MHz), the criteria and possibilities for sharing between the broadcast auxiliary services and MSS will have to be explored, as well as additional

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<sup>26/</sup> The spectrum is desirable because inexpensive dual-mode phones can be developed that will work with both terrestrial PCS systems and the PCSAT system, when the user is not within range of a terrestrial system. See, e.g., Application of PCSAT For Authority to Construct a Domestic Communications Satellite System for the Provision of Mobile Satellite Service at 7, FCC File Nos. 24/25-DSS-P-94 (April 7, 1994).

<sup>27/</sup> In addition, AMSC does not object to advancing the date of the allocation or making the entire allocation available worldwide, as long as doing so does not affect the availability of the bands in 1996 in the United States.



allocations for broadcasters to minimize the impact of any relocation that may be required.<sup>28/</sup>

Besides the above 35 X 2 MHz, other 2 GHz allocations should be addressed. With respect to the 2110-2120 MHz band, AMSC's technical analysis shows that sharing may be possible between MSS downlinks and space research uplink systems operating in the band. The incumbent terrestrial systems in the band are subject to reaccommodation under the FCC's Emerging Technologies proceeding.<sup>29/</sup> Therefore, an MSS uplink allocation at 2110-2130 MHz could be established by WRC-95 for use in connection with the 2160-2180 MHz downlink band (if 2010-2025 MHz is not available) or an alternate downlink band.

Finally, in the 1930-1970/2120-2160 MHz bands, the U.S. should propose upgrading the secondary allocation to primary and should seek a worldwide MSS allocation. Though portions of the bands may not be available in the U.S., a primary allocation will give administrations the flexibility to accommodate domestic or regional MSS systems from a larger range of allocations.

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<sup>28/</sup> Because of congestion in the 1990-2110 MHz band, broadcasters are seeking additional spectrum in the 4660-4685 MHz band, which is scheduled to be reallocated from government to commercial use next month. See Comments of Association For Maximum Service Television, Inc., ET Docket No. 94-32 (June 15, 1994). This position was supported in reply comments filed on June 30, 1994 in the same docket by National Association of Broadcasters, NBC, and Capital Cities/ABC. Another possibility is that additional spectrum may be available for broadcast auxiliary services in the 2110-2130 MHz band.

<sup>29/</sup> Second Report and Order, ET Docket No. 92-9, 8 FCC Rcd 6495 (1993) (rechannelization to accommodate existing 2 GHz facilities); Third Report and Order and Memorandum Opinion and Order, ET Docket No. 92-9, 8 FCC Rcd 6589 (1993) (transition plan).

D. 1492-1525 MHz

The 1492-1525 MHz band should be made available for domestic MSS use in the United States. The band is part of a larger band (1435-1525 MHz) primarily used for mobile aeronautical telemetry operations in the U.S. As demonstrated in AMSC's recent filing with NTIA, the 1492-1525 MHz band can be made available immediately to be shared by aeronautical telemetry systems and MSS systems' downlinks.<sup>30/</sup> Domestic MSS could be provided on numerous narrowband channels specifically grouped with respect to the telemetry channels to preclude unacceptable interference between the systems. Implementation of an MSS allocation would be based on case-by-case coordination between the MSS operators and incumbents, the first step of which is demonstrated in AMSC's NTIA filing (e.g., spectrum requirements).<sup>31/</sup> However, it is likely to take one more year of exchange of information between the interested parties before a definitive agreement can be reached on sharing principles. AMSC requests that the U.S. propose at WRC-95 (or WRC-97, if necessary) to change RR No. 722C to permit MSS in the U.S. at 1492-1525 MHz.

E. 1675-1710 MHz

The 1675-1710 MHz band should be made available for domestic MSS use in the United States; however, no changes to the Radio

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<sup>30/</sup> Comments of AMSC on NTIA Preliminary Spectrum Reallocation Report at 6, Technical Appendix at 9-11 & Annex II (May 11, 1994) (submitted to FCC as attachment to Comments of AMSC, ET Docket No. 94-32 (June 15, 1994)).

<sup>31/</sup> Id.

Regulations are needed to accomplish this. This band is principally used by meteorological satellites and radiosondes (on weather balloons and other platforms). As discussed in AMSC's filing with NTIA, there are significant possibilities for MSS sharing with the meteorological services.<sup>32/</sup> Frequency avoidance (i.e., adjacent-channel sharing), co-channel time sharing, and co-channel sharing with geographic separation between mobile earth stations and meteorological receivers are all workable approaches to sharing the 1675-1710 MHz band with MSS uplinks. Again, implementation of an MSS allocation would be based on case-by-case coordination between the MSS operators and incumbents. Appropriate guidelines for protection of U.S. meteorological operations from foreign MSS systems are being developed in the ITU-R.

F. 2390-2420 MHz

At WARC-92, the United States proposed unsuccessfully an international allocation of the 2390-2420 MHz band (Earth-to-space) to GSO MSS, and NTIA has recently identified part of this spectrum (2390-2400 MHz, 2402-2417 MHz) in its preliminary spectrum allocation report as being available for non-Government use.<sup>33/</sup> In the NOI, the FCC requests comment as to whether the

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<sup>32/</sup> Id. at 6-7, Technical Appendix at 4-9 & Annex I.

<sup>33/</sup> See Preliminary Spectrum Allocation Report, U.S. Department of Commerce, NTIA Special Publications 94-27, Section 4 at 14-17 (February 1994); NOI, 9 FCC Rcd at 2435 para. 27.

United States should again pursue an international MSS allocation in this band.<sup>34/</sup>

As demonstrated in the attached Technical Appendix, AMSC believes that the U.S. should not pursue an MSS uplink allocation in this band, because these bands are plagued by irreducible levels of noise generated by microwave ovens and numerous other Industrial, Scientific and Medical ("ISM") devices operating in the 2400-2500 MHz band. There are no apparent means for MSS uplinks to operate in the presence of the ISM noise. However, although not ideal, the 2390-2410 MHz band could be considered as a candidate for an MSS downlink allocation, insofar as the noise and interference problems from ISM devices would be localized to the receiving mobile earth stations, as compared to uplink noise that could affect the entire system.

II. RESOLUTION 46 SATELLITE COORDINATION PROCEDURES DO NOT APPLY TO THE 1525-1559/1626.5-1660.5 MHz BANDS

Resolution 46 was adopted at WARC-92 to provide interim procedures for the coordination of nongeostationary satellite systems with other services. The procedures are to be applied only in frequency bands in which specific reference is made to Resolution 46 in footnotes to the Table of Allocations (e.g., Footnote 726D). The United States and the United Kingdom together took a Reservation to the Final Acts stating that they will not apply Resolution 46 to geostationary satellite systems in certain frequency bands, e.g., the 1525-1559/1626.5-1660.5 MHz

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<sup>34/</sup> NOI, 9 FCC Rcd at 2435 para. 27.

bands.<sup>35/</sup> The purpose the separate statement was to ensure that existing systems, such as the Inmarsat and the AMSC systems, would not be subject to additional coordination procedures. At WRC-95, the U.S. should clarify this position with appropriate language in the allocations.

III. THE U.S. MUST ASSURE THAT WRC-95 WILL BE THE "MSS  
CONFERENCE" RATHER THAN THE "VGE CONFERENCE"

AMSC endorses the VGE effort to streamline the Radio Regulations. Nevertheless, AMSC is concerned that an attempt to implement the VGE, no matter how sincere, will result in using all the conference resources and time to the detriment of MSS. Although the U.S. believes in the importance of addressing MSS issues at WRC-95,<sup>36/</sup> other countries, particularly in Europe, disagree. Some countries believe that the Conference should dedicate its resources to the VGE and that it is too early after

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<sup>35/</sup> See Final Protocol No. 79 WARC-92 Final Acts. The text reads:

Referring to statements relating to the frequency range below 3 GHz concerning mobile-satellite services, it is necessary to highlight an oversight in drafting and reading texts which could lead to a new and unnecessary burden of coordination between geostationary space stations and terrestrial services in certain frequency bands. Accordingly, the above Administrations will not accept any commitment for this form of coordination arising from omission of the term "non-geostationary" in the text of certain footnotes, e.g. Footnote Nos. 726x and 7xx, to the Table of Frequency Allocations in Article 8. This reservation is made on behalf of all national and international organizations for whose frequency assignments the two countries are the notifying Administrations.

<sup>36/</sup> The NOI concludes that "a major goal of the U.S." has been to facilitate MSS, and that the introduction of a worldwide MSS service may well create "a brand new U.S. industry." NOI, 9 FCC Rcd at 2433 para. 19.

WARC-92 to deal with MSS.<sup>37/</sup> As a result, a substantial danger exists that the VGE deliberations will dominate WRC-95 and MSS matters may get short shrift.

The U.S. must protect against this possibility. AMSC suggests that the U.S. take steps to assure the fair and full treatment of MSS issues at WRC-95. Primarily, the U.S. should take a leadership role in determining the structure and working methods at WRC-95. Committees should be organized based on major agenda items. Accordingly, at least two equal committees should be formed at the Conference -- one for VGE matters and one for MSS matters. With this structure, VGE and MSS matters can proceed independently. The U.S. should encourage the ITU to adopt this structure as early before the Conference as possible in order to assure that countries bring adequate resources to the Conference to deal with both matters effectively.

As a matter of policy, AMSC believes that VGE proposals should not be adopted at WRC-95. AMSC is concerned that the proposals, while helpful, will have substantive ramifications that require careful consideration. A month is insufficient time to deal with regulations that potentially affect virtually every

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<sup>37/</sup> At the Fifth Plenary meeting, the delegate of Australia strongly objected to any enlarged scope of agenda activity for MSS services, since such consideration would be "too soon after WARC-92" and in light of the limited time available, WRC-95 "should be devoted primarily to the report of VGE and related proposals." Delegations of France, Belgium, Germany, United Kingdom, Sweden, Cuba, Spain, New Zealand, Saudi Arabia, Norway, Japan, the United Arab Emirates and Algeria all echoed and supported this view. See Minutes of the Fifth Plenary meeting, ITU Document 79 (November 18, 1993).

radio service. In any event, it is questionable whether all services will be represented at the Conference.

The VGE proposals can be implemented over time. AMSC proposes that WRC-95 categorize the VGE issues according to services and then place those VGE portions on the agenda for adoption at future conferences. For example, satellite coordination changes could be identified at WRC-95 and then placed on the agenda for WRC-97 or WRC-99.<sup>38/</sup> In this way, the appropriate people and resources will be available at the relevant WRC to deal with the VGE matter related to a particular service. Indeed, the new ITU structure of having conferences every two years, adopted by the 1992 Additional Plenipotentiary Conference ("APP"), is designed to permit this type of incremental improvement of allocations and regulations.

#### IV. RESOLUTION 528 SHOULD NOT APPLY TO THE 2310-2360 MHz BAND

Although not on the agenda for WRC-95, it is likely that issues related to DARS will be on the agendas for either the 1997 or 1999 WRC. At the relevant conference, the U.S. should clarify that Resolution 528 does not apply to the 2310-2360 MHz band.

At WARC-92, allocations to the broadcasting-satellite service and complementary terrestrial broadcasting service (which

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<sup>38/</sup> With respect to the VGE Report, of critical importance to AMSC are VGE proposals that may change the coordination procedures for satellite systems. These proposals should not be adopted if such changes will in any way impede the use of bilateral or multilateral negotiations between sovereign nations.

is referred to in the U.S. as Digital Audio Radio Service, or DARS) were made in the 2310-2360 MHz and 1452-1492 MHz bands. Only India and the United States have allocations in the 2310-2360 MHz band. In addition, Resolution 528 was adopted which provides that 1) a conference should be convened for the planning of the service; and 2) that prior to the conference, broadcast-satellite systems may only be introduced in the upper 25 MHz of the 1452-1492 MHz or the 2310-2360 MHz bands.

AMSC believes that the application of Resolution 528 to the 2310-2360 MHz band was inadvertent. A planning conference in this band is unnecessary because no other systems will be operating in the respective regions near India or the United States. For this same reason, an allotment plan that limits the use of the 2310-2360 MHz band also is unnecessary. The U.S. should clarify the language of Resolution 528 to reflect that it does not apply to the 2310-2360 MHz band.

V. U.S. PREPARATIONS FOR FUTURE WORLD RADIOCOMMUNICATION CONFERENCES

The provisions of the new Constitution and Convention adopted at the 1992 APP require that the ITU convene a World Radiocommunication Conference every two years. The conferences will consider substantive agenda matters and make recommendations for future conference agendas two and four years into the future. The NOI recognizes this new process and invites comments on how the government might appropriately establish a "continuous process of conference preparation."<sup>39/</sup>

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<sup>39/</sup> NOI, 9 FCC Rcd at 2438 para. 44.



AMSC applauds the Commission's focus on this important subject and agrees that a routine ongoing process is essential to the proper development of U.S. policy in this rapidly changing telecommunications environment. Two components of the current preparatory process must be examined: (i) the Commission's NOI and related industry advisory committee ("IAC") procedures and (ii) the relationship and coordination with the Executive Branch, through the Interdepartmental Radio Advisory Committee ("IRAC") process.

As to the first component regarding the FCC's processes, past experience demonstrates that substantial delay has occurred between the point in time when the Commission has before it adequate information regarding the next conference agenda and the time the actual NOI for that conference has been issued. Preparing the notice and establishing an IAC requires considerable effort. As a matter of proper preparation, the subject has not been given sufficient priority status in the past.<sup>40/</sup>

World Radiocommunication Conferences will likely be held in the October/November timeframe. Under provisions of the ITU Convention (No. 316), proposals from members should be submitted at least four months prior to the start of a conference; hence, no later than June of the year of the conference. Using the instant NOI as an example, the first set of comments are due in

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<sup>40/</sup> For example, in connection with the instant NOI, the 1993 World Radiocommunication Conference was completed on November 19, 1993, with a proposed WRC-95 agenda, more than five months prior to the issuance of this NOI.